

The Midwest CHU

Climate Hub Update

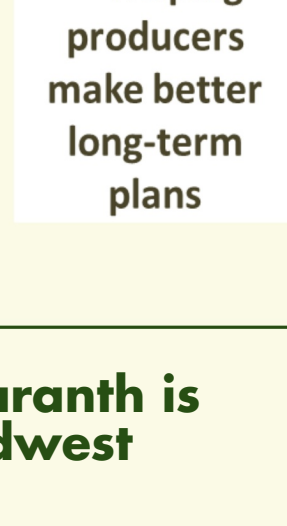
Summer 2017

Promoting Climate-Informed Decisions Since 2014.

Useful to Usable (U2U): That's a Wrap!

After six productive years, it is bittersweet to say farewell to the U2U project. Since 2011, the U2U team has developed five climate-based decision support tools, published 50 peer-reviewed publications, connected with agricultural stakeholders at 165 events, raised an additional \$860,000 in funding to expand or leverage U2U work, and received national and local recognitions for excellence. Over 120 faculty, staff, graduate and undergraduate students contributed to the U2U project over the years, and it's their hard work and dedication that have made this project such a success.

Be sure to visit www.AgClimate4U.org for continued access to project resources and information.



Super Weed Palmer amaranth is spreading across the Midwest



Photo Credit: USDA-NRCS

Palmer amaranth, an aggressive annual weed native to the Southwest US, is rapidly spreading across the Midwest. Palmer amaranth was first detected in Iowa in 2013 and has since spread to 49 out of the 99 state counties. In 2016, the super weed was detected in two Minnesota counties and eradication efforts are currently underway. Because of the rapid growth rate, prolific seed production, and very high competitiveness of this weed, it is able to overrun agricultural fields in only a few years if not properly controlled. Corn, soy, and cotton crops are especially at risk from Palmer amaranth. To complicate matters further, this weed can develop resistance to numerous herbicides including glyphosate (Roundup), making it very difficult and expensive to control.

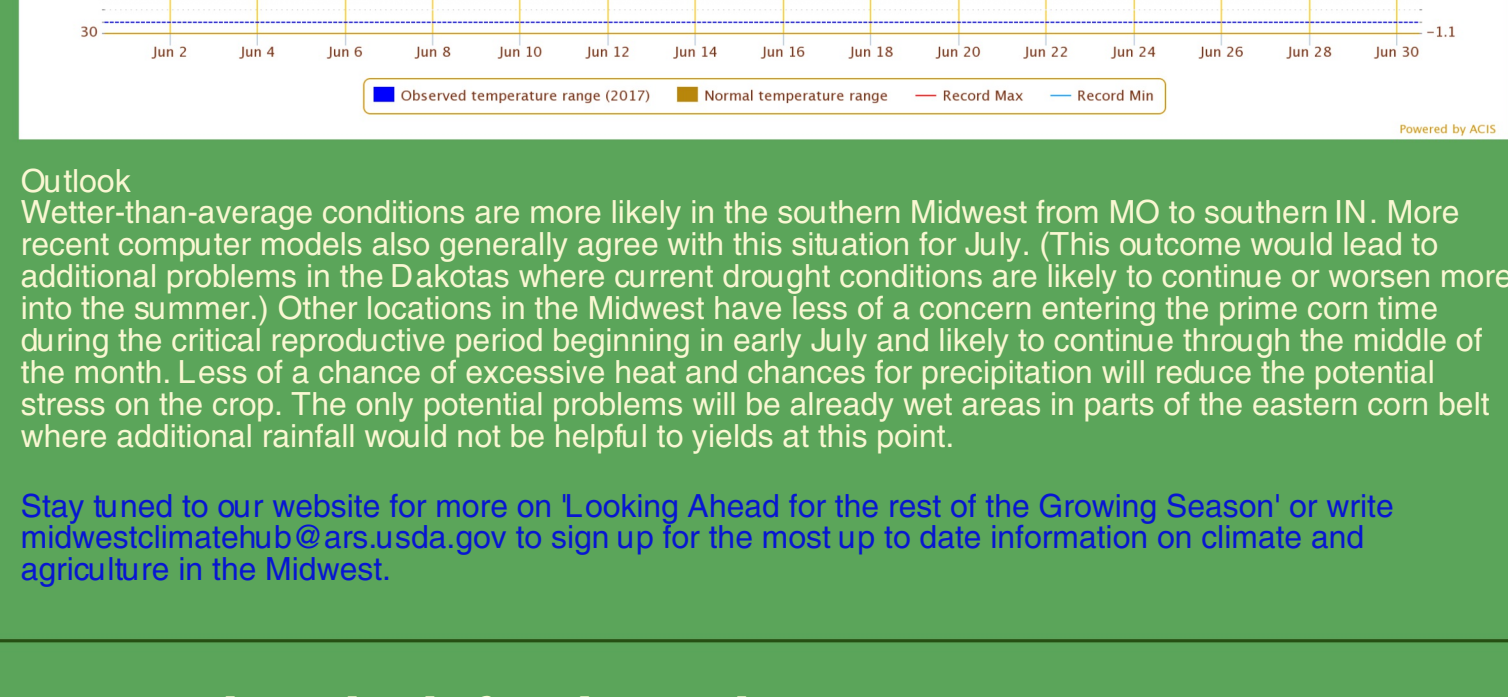
In July 2017, Palmer amaranth was added to the Iowa noxious weed list. Iowa and Minnesota landowners should be proactive in identifying this weed. Report any suspected Palmer on your property to your local county extension agent and crop consultant. Select here for more information.

CHU in Every Issue...

A Midwest Ag Focus Climate Update: July 2017

Current Conditions

As of late June/early July the Midwest has some dry conditions across much of the Corn Belt and some areas of excess wetness still in IN. The last 30 days have created some winners and losers in the Corn Belt - Central IA to central IL and parts of MO received less than half average precipitation with some areas below 25%. In contrast large parts of WI, MI and IN received 150% of average precipitation or more. June also ended warmer than average throughout nearly all the middle of the country. The magnitude of the warmth helps to explain current conditions. Most of the central and eastern part of the Corn Belt was up to 2 degrees F above average. The other contrast was with temperatures throughout the month: Early June was dominated by largely warmer-than-average conditions while the latter part of the month was cooler than average (see image for Waterloo, IA below).



Outlook

Wetter-than-average conditions are more likely in the southern Midwest from MO to southern IN. More recent computer models also generally agree with this situation for July. (This outcome would lead to additional problems in the Dakotas where current drought conditions are likely to continue or worsen more into the summer.) Other locations in the Midwest have less of a concern entering the prime corn time during the critical reproductive period beginning in early July and likely to continue through the middle of the month. Less of a chance of excessive heat and chances for precipitation will reduce the potential stress on the crop. The only potential problems will be already wet areas in parts of the eastern corn belt where additional rainfall would not be helpful to yields at this point.

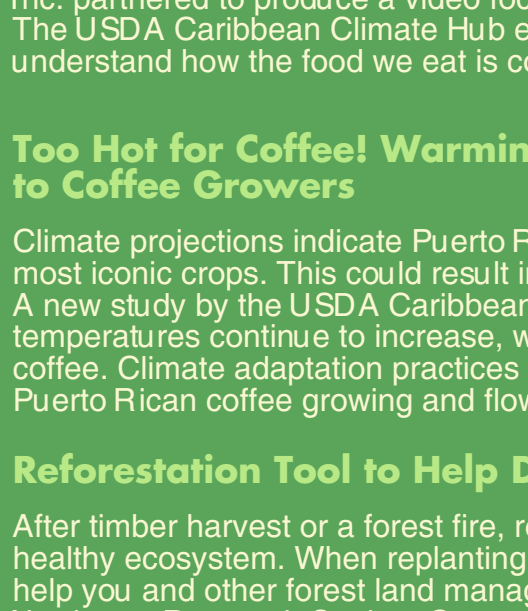
Stay tuned to our website for more on 'Looking Ahead for the rest of the Growing Season' or write midwestclimatehub@ars.usda.gov to sign up for the most up to date information on climate and agriculture in the Midwest.

Regional Outlook for the Midwest

In collaboration with NOAA and the Midwest Regional Climate Center, we are pleased to provide the following Regional Outlooks for Summer 2017. The Midwest, Missouri Basin, and Great Lakes regional outlooks can be accessed by clicking on their titles to the right.

- [Missouri River Basin](#)
- [Great Lakes Region](#)
- [Midwest Region](#)

Meet the Midwest Climate Hub Coordinator: Charlene Felkley



Charlene is the USDA Midwest Climate Hub's newest member. As the Hub's Coordinator, she brings over 10 years of very diverse professional experience to the Ames, IA position. After receiving her BS from the Ohio State University in Natural Resource Management, Charlene joined the US Peace Corps. She lived 2 years in Togo, West Africa working as a Natural Resource Management volunteer. Prior to joining the Climate Hub Team, Charlene was a commissioned officer in the NOAA Commission Corps providing platforms for scientists to conduct research and delivering actionable science to decision-makers and stakeholders. She has been an Operations and Navigation Officer on a fisheries research vessel, an outreach professional for climate change in the US affiliated Pacific Islands for the NWS, a science operations officer for a National Marine Sanctuary, a working and Master SCUBA diver, and a consultant for National Marine Fisheries. Her passion however has always stayed with Climate Outreach. She finished her MA in Sustainable Development at Hawaii Pacific University.

Charlene loves the water! and has put her dive skills to use here in the Midwest by becoming a volunteer with the local county dive and recovery team. She is a self-proclaimed movie buff and collects quotes. One of her favorites is below.

"I may not have gone where I intended to go, but I think I have ended up where I needed to be."
-Douglas Adams

USDA Climate Blog Updates

New Caribbean Climate Hub Video Teaches Kids About Agriculture

Sr. Sapó is a very popular figure among children in Puerto Rico and Latin America and he has a new healthy hobby, agriculture! The USDA Caribbean Climate Hub and the musical group Atención Atención Inc. partnered to produce a video focusing on how food is grown and its relationship with nature. The USDA Caribbean Climate Hub explains they want to promote agriculture and help children better understand how the food we eat is connected to sunshine, rain and the soil.

Too Hot for Coffee! Warming Temperatures in Puerto Rico Present a Challenge to Coffee Growers

Climate projections indicate Puerto Rico may be warmer and drier, likely impacting one of the Island's most iconic crops. This could result in less-favorable growing conditions in the coming decades for coffee. A new study by the USDA Caribbean Climate Hub shows that if greenhouse gas emissions and temperatures continue to increase, we may see a reduction in lands with highly-suitable conditions for coffee. Climate adaptation practices and research can help growers respond to new conditions and keep Puerto Rican coffee growing and flowing.

Reforestation Tool to Help Determine Where to Plant Tree Seedlings

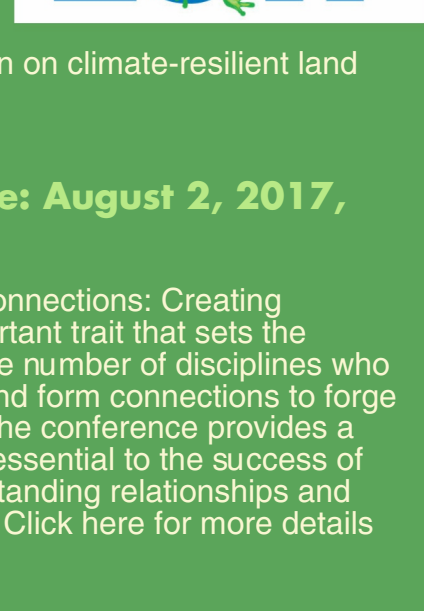
After timber harvest or a forest fire, reforestation is essential for a productive working landscape and healthy ecosystem. When replanting you need to decide where you will get tree seeds or seedlings. To help you and other forest land managers, reforestation scientists at the USDA Forest Service Pacific Northwest Research Station, Oregon State University, and the Conservation Biology Institute developed a web-based mapping application, the Seedlot Selection Tool.

[For More on USDA Blogs, click here](#)

On the Radar

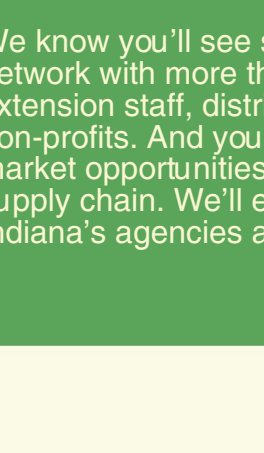
102nd Annual Ecological Society of America Meeting: August 6-11, Portland, OR

Environmental scientists from 50 U.S. states, U. S. territories, and countries around the world will converge on Portland, Oregon this August for the 102nd Annual Meeting of the Ecological Society of America. Five thousand attendees are expected to gather for nearly four thousand scientific presentations on breaking research and new ecological concepts at the Oregon Convention Center. The meeting theme, "Linking biodiversity, material cycling and ecosystem services in a changing world," invites reflection on the often invisible environmental processes that support human life. Natural systems filter water, enrich topsoil, support fisheries, prevent erosion, pollinate crops, buffer effects of storms and floods, and bring us joy and recreation.



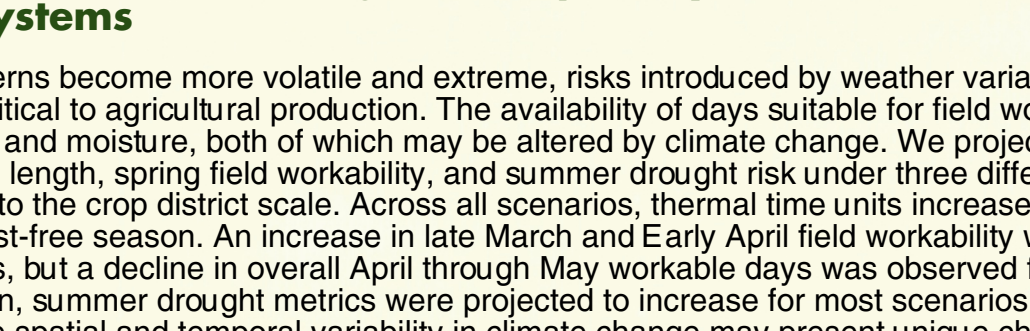
*The USDA Climate Hub Research Fellows are leading a special session on climate-resilient land management practices Thursday, August 10th.

Soil and Water Conservation Society Annual Conference: August 2, 2017, Madison, WI



This year's conference theme, Conservation Connections: Creating Pathways to Sustainability, focuses on an important trait that sets the SWCS annual conference apart from others: the number of disciplines who come together to share information, network, and form connections to forge best practices in soil and water conservation. The conference provides a forum for interdisciplinary discussions that are essential to the success of conservation, a field that depends upon understanding relationships and interconnectedness. Registration is now open. Click here for more details and to register.

10th Annual Conservation in Action Tour: September 5-6, 2017, Central Indiana



We know you'll see some of the most exciting conservation innovations in central Indiana. You'll network with more than 200 farmers, crop consultants, ag retailers, agribusiness leaders, university and extension staff, district teams, state and federal agency representatives and leaders of conservation non-profits. And you'll gather plenty of ideas and inspiration to bring home. We'll dig into new premium market opportunities that extend the benefits of conservation from the farm all the way through the supply chain. We'll explore how watershed projects engage ag retailers and agribusiness, and how Indiana's agencies and farm organizations work in partnership, building bridges to the future.

Additional Resources

RESEARCH ARTICLE: Changes in field workability and drought risk from projected climate change drive spatially variable risks in Illinois cropping systems

As weather patterns become more volatile and extreme, risks introduced by weather variability will become more critical to agricultural production. The availability of days suitable for field work is driven by soil temperature and moisture, both of which may be altered by climate change. We projected changes in Illinois season length, spring field workability, and summer drought risk under three different emissions scenarios down to the crop district scale. Across all scenarios, thermal time units increased in parallel with a longer frost-free season. An increase in late March and Early April field workability was consistent across scenarios, but a decline in overall April through May workable days was observed for many cases. In addition, summer drought metrics were projected to increase for most scenarios. These results highlight how the spatial and temporal variability in climate change may present unique challenges to mitigation and adaptation efforts.

Iowa Commercial Horticulture Survey Results: 2015 data compiled for release spring of 2017



The Iowa Department of Agriculture and Land Stewardship commissioned three Iowa Commercial Horticulture Surveys for Food Crops to track the edible horticulture industry in Iowa (1989, 2000, 2015). Data and conclusions are drawn from the 2015 survey, based on responses from 882 horticulture farmers. The 2015 survey data was collected in 2016 and compiled and analyzed for release in the spring of 2017.

ARTICLE: A Climate Change Solution Beneath Our Feet

A climate change solution beneath our feet: "There's too much carbon in the atmosphere and not enough in the ground where it can be used. A new effort in California aims to flip that picture. The state's Healthy Soils Incentives Program is considered the first in the nation to provide state funding to help farmers and ranchers enhance their soils to reduce greenhouse gas emissions. The \$7.5 million program, expected to launch this summer, encourages farming practices known to boost microbial communities underground and sequester carbon."

USDA Resource Guide for American Indians & Alaska Natives

The USDA Resource Guide for American Indians and Alaska Natives (AI/AN) was developed to provide tribal leaders and tribal citizens, 1994 Land-Grant Tribal Colleges and Universities, AI/AN businesses, and non-governmental organizations serving AI/AN communities with a tool for navigating USDA resources. The USDA programs and services available to members of American Indian and Alaska Native tribes are described in the following pages. This guide provides readers with a comprehensive summary of USDA Programs, separated into four categories: 1. Agriculture, Food Sovereignty, and Traditional Foods 2. Business and Community Development 3. Conservation and Forestry 4. Research, Extension, and Outreach



New Bee Better Certification for Farmers and Ranchers Who Help Bees on America's Working Lands!

The NRCS works with conservation partners like the Xerces Society for Invertebrate Conservation to help farmers plan and implement conservation practices that benefit bees and other pollinators. Through a new certification program - Bee Better Certified - agricultural producers can inform consumers that they are farming in ways that benefit bees.

Agriculture Secretary Sonny Perdue declared June 19-25, 2017, National Pollinator Week to draw attention to the plight of pollinators whose numbers are in decline. As part of USDA's commitment, the USDA Natural Resources Conservation Service works with conservation partners like the Xerces Society for Invertebrate Conservation to help farmers plan and implement conservation practices that benefit bees and other pollinators. Read more Here!

RESEARCH: Climate Change and Wildfire Effects in Aridland Riparian Ecosystems: An Examination of Current and Future Conditions

Aridland riparian ecosystems are limited, the climate is changing, and further hydrological change is likely in the American Southwest. To protect riparian ecosystems and organisms, we need to understand how they are affected by disturbance processes and stressors such as fire, drought, and non-native plant invasions. Riparian vegetation is critically important as foraging, resting, migrating, and breeding habitat to birds and other animal species in the southwestern United States...The structurally diverse, species-rich vegetation along many southwestern streams supports high densities of territories and nest sites for a variety of birds including several species of high conservation priority. Survival and reproduction of woody riparian plants is largely determined by periodic floods and droughts. Find out more here.

To remove your name from our mailing list, please email midwestclimatehub@ars.usda.gov. Questions or comments? E-mail us at midwestclimatehub@ars.usda.gov or call 515-294-0136.